

AD-A220 881

## DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION <b>UNCLASSIFIED</b>		1b. RESTRICTIVE MARKINGS <b>NONE</b>	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT <b>APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED.</b>	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			
4. PERFORMING ORGANIZATION REPORT NUMBER(S)		5. MONITORING ORGANIZATION REPORT NUMBER(S) <b>AFIT/CI/CIA- 90-013</b>	
6a. NAME OF PERFORMING ORGANIZATION <b>AFIT STUDENT AT Arizona State University</b>	6b. OFFICE SYMBOL (if applicable)	7a. NAME OF MONITORING ORGANIZATION <b>AFIT/CIA</b>	
6c. ADDRESS (City, State, and ZIP Code)		7b. ADDRESS (City, State, and ZIP Code) <b>Wright-Patterson AFB OH 45433-6583</b>	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (if applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c. ADDRESS (City, State, and ZIP Code)		10. SOURCE OF FUNDING NUMBERS	
		PROGRAM ELEMENT NO.	PROJECT NO.
		TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) <b>(UNCLASSIFIED)</b> A Comparative Analysis of Health-Promotion Behaviors in Civilian and Military Nurses			
12. PERSONAL AUTHOR(S) <b>Teresa A. Towne</b>			
13a. TYPE OF REPORT <b>THESIS/DOCTORAL DISSERTATION</b>	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) <b>1990</b>	15. PAGE COUNT <b>55</b>
16. SUPPLEMENTARY NOTATION <b>APPROVED FOR PUBLIC RELEASE IAW AFR 190-1 ERNEST A. HAYGOOD, 1st Lt, USAF Executive Officer, Civilian Institution Programs</b>			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	
19. ABSTRACT (Continue on reverse if necessary and identify by block number)			
			
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION <b>UNCLASSIFIED</b>	
22a. NAME OF RESPONSIBLE INDIVIDUAL <b>ERNEST A. HAYGOOD, 1st Lt, USAF</b>		22b. TELEPHONE (Include Area Code) <b>(513) 255-2259</b>	22c. OFFICE SYMBOL <b>AFIT/CI</b>

A COMPARATIVE ANALYSIS OF HEALTH-PROMOTION BEHAVIORS  
IN CIVILIAN AND MILITARY NURSES

by

Teresa A. Towne

A Thesis Presented in Partial Fulfillment  
of the Requirements for the Degree  
Master of Science

ARIZONA STATE UNIVERSITY

May 1990

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## CHAPTER 1

## Introduction

Wellness is fundamental to all aspects of nursing practice, particularly in the area of health education. Since nurses are members of the largest profession involved with health education in the United States, they can be effective role models for high-level wellness (Somers, 1976). The image that nurses portray when delivering nursing care has a direct impact on the client's perception of what is necessary for health maintenance. Recently the emphasis on health care has become a more positive approach for health promotion rather than treatment of illness (Pender, 1982). Therefore, it is important to analyze the health behaviors of practicing registered nurses to evaluate their effectiveness as role models for health promotion.

The nursing profession is comprised of individuals with differing beliefs and practices regarding personal health habits. Some nurses display healthy behaviors which may include exercising regularly, following a healthful diet, limiting caffeine and alcohol intake, and/or reducing stress and fatigue in their lives (Pender, 1982). Other nurses, however, do not demonstrate healthy behaviors, despite their awareness of what is essentially "healthy." Their behaviors vary, and may consist of one or more of the following: smoking, drug or alcohol consumption, poor dietary habits (eating disorders), obesity, inadequate rest, and lack of physical activity or sedentary lifestyle (Pender).



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Nurses are in a key position to motivate behavioral changes in others. Likewise, to maintain their professional image, nurses are expected to set examples for others (Laurent, 1985). Once professional nurses are more cognizant of their individual health habits, they will be better prepared to educate the public regarding health promotion.

Statement of Purpose

The purpose of this study will be to identify which health behaviors are more prevalent among two groups of professional nurses: civilian and military. Military nurses will be included in this study since there are few documented studies involving health behaviors of this specific group of nurses. Both groups of nurses will be analyzed to evaluate their self-care health behaviors. Those variables which will be examined are reported height and weight, dietary habits, exercise, smoking, sleep patterns, drug and alcohol consumption, stress, and medical care (i.e. dental hygiene, periodic physical examinations). Personal satisfaction with present health behaviors as well as indications to make changes in daily lifestyle activities will be examined from data obtained. It will be useful to consider how nurses perceive themselves as role models for the client population.

Report, Military Publications, Periodicals, Scientific Literature

Military nurses will report more health-promotive behaviors than civilian nurses. This rationale is based on the fact that military nurses are required to meet mandatory guidelines for yearly physical fitness testing, random drug screening, weigh-

ins, and medical/dental appointments. These same standards are not practiced in civilian health care institutions.

#### Assumptions

1. Nurses do function as role models.
2. In this study, past changes in self-care health behavior and future potential changes in health promotion behavior(s) will indicate value in the specific activity.

#### Research Questions

1. Is there an association between selected demographic variables (i.e., age, number of dependents, personal health history) and nurses' health habits?
2. Do these two groups of nurses perceive their personal lifestyles as healthy or unhealthy?
3. Are there health-related behaviors common in both groups of nurses?
4. Are nurses satisfied with their present health behaviors? If not, do they plan to change their lifestyle?
5. Do these nurses believe that they are role models for the public in regard to health promotion?

#### Operational Definitions

The following terms will be operationally defined for use in this study as listed below:

Health: state of physical and psychological well-being; a dynamic balance between self and environment which is either maintained or restored.

Illness: apparent imbalance between individual and

environment which may/may not result in a disease process.

Wellness: the ability to perform to maximum potential; initiative of maintaining optimal level of health (i.e., regular exercise, proper diet, adequate rest, stress management).

Health behaviors: those observable actions of daily living which determine the outcome of health status, whether favorable or unfavorable. Health habits will be used synonymously with health behaviors.

Health-promotion behaviors: those actions which contribute to optimal level of health in daily living. This term will be used interchangably with "health-promoting behaviors."

Role model: an individual who is able to reinforce or motivate changes in an observer's health behavior(s).

Civilian nurse: an individual who is licensed and currently practicing as a registered nurse in a civilian institution.

Military nurse: a registered nurse on active-duty status at a military hospital.

Reservist nurse: a civilian nurse employed at either a military or civilian hospital who is a member of a military reserve organization.

## Chapter 2

Conceptual Framework

In order to achieve an optimal level of health, individuals must believe that they can make improvements in their lives. Health behaviors are determined by several factors. Reed-Flora & Lang (1982, p.4) suggest that "heredity, environment, our health care system, our lifestyle, and our value orientations toward health" define the health behaviors we practice. Therefore, behavioral changes can occur once individuals are aware of the value associated with specific health-promotion behaviors.

The beliefs and events that motivate health behavior were first proposed in the "Health Belief Model." This model was developed by Hochbaum (1958) and later modified by Rosenstock (1960), Gochman (1972), and Becker (1974). In this model, it is postulated that certain health behaviors will decrease the incidence of serious illness and promote healthy lifestyles (see Figure 1).

The Health Belief Model deals with four basic principles which are intrinsic to health behaviors: (1) "perceived susceptibility" which refers to the individual's view of the chance of experiencing a potentially harmful situation, (2) "perceived seriousness" which is concerned with how threatening a condition is to the person involved, (3) "perceived benefits" which focus on the effectiveness of specific action in reducing the threat of the situation, and (4) "perceived barriers" which correspond to the negative component(s) of the anticipated

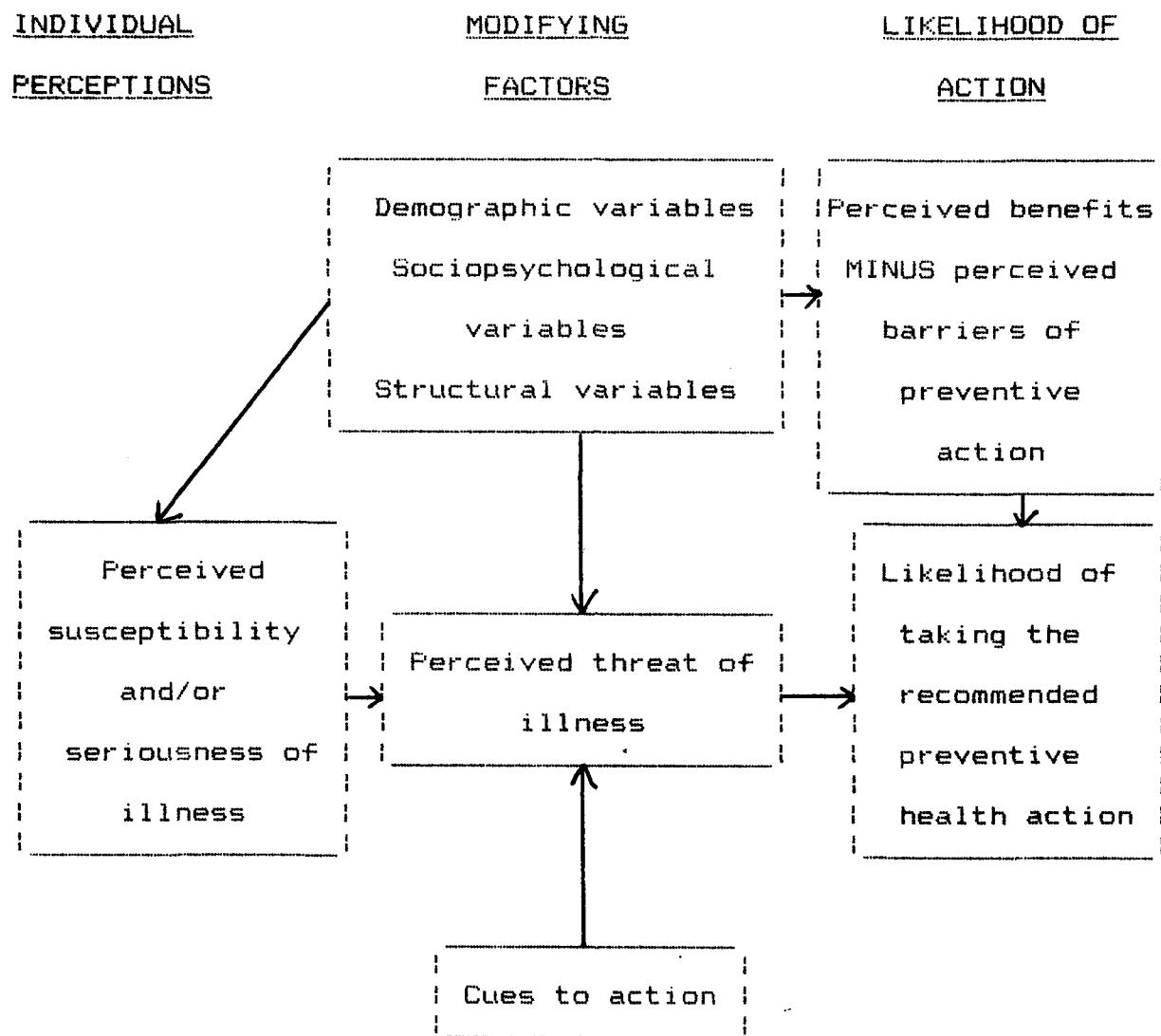


Figure 1. The health belief model and likelihood to participate in health behaviors.

Note. From The Health Belief Model and Personal Health Behavior  
(p. 7) by M. H. Becker (Ed.), 1974, Thorofare, NJ: Charles B. Slack. Copyright 1974 by Slack, Inc. Adapted with permission.

behavior (Rosenstock, 1966). These four components are used to predict health behavior. The principle of motivation was later added to the Health Belief Model to address further rationale for health beliefs and the potential to change health behaviors (Becker, 1974). "Health motivation" refers to the individual's inclination or readiness to take action toward a positive, health-related goal.

Since health behaviors are founded on individual and voluntary decisions, they should be chosen selectively. Behavioral decisions are based on three types of health action: (1) "preventive behavior" where no symptoms have yet occurred, (2) "illness behavior" where symptoms develop which determine the course of action, and (3) "sick-role behavior" where the individual has been given a medical regimen to follow (Becker, 1974). These behaviors correspond to the degree of severity or seriousness of the symptoms under specific circumstances.

Various cues may initiate the internal or external stimulus for preventive health action. These may originate from mass media campaigns, advice from significant others, illness of a family member or friend, and/or newspaper and journal articles (Becker, 1974). These cues are instrumental in decreasing the threat of illness once the individual recognizes them.

Health care professionals, especially nurses, are exposed to a vast amount of information regarding preventive health practices and health promotion. When nurses are threatened by illness, there is a greater chance that they will seek medical

advice for more control in their lives (Langlie, 1977). Subsequently, the value of the outcome influences the action which nurses will take. If nurses expect that the outcome will be worthwhile, then it is more likely that they will pursue medical advice if necessary. The Health Belief Model supports nurses' perceptions of their health behaviors and relates these to the decision to choose appropriate health-promotion behaviors. Past experiences, present internal state, and the influence of the immediate environment contribute greatly to nurses' motivation to change their lifestyles (Pender, 1982).

Modifying factors explain individual differences in the likelihood of taking preventive health action. Modifying factors are important in determining whether or not a nurse chooses to change his/her lifestyle. Demographic variables such as age, gender, and cultural background can influence the nurse's decision to begin a weight-control program, for example (Pender, 1982). Of equal importance are sociopsychological variables such as personality, peer and reference group pressures, and social class (Becker, 1974). These variables refer to the nurse's prior experiences which prompt him/her to initiate a behavior change. Such factors may include obese clients that he/she has cared for in the hospital, contacts with family members or close friends, and/or personal signs of weight gain.

The Health Belief Model includes structural variables which are valuable factors to consider in the final decision-making process. Structural variables include safety,

accessibility in terms of cost and/or availability, complexity or difficulty of the health action, and duration of time necessary to accomplish the behavioral change. At this point, the nurse may consider the distance needed to travel to an aerobics class, as well as the cost for the class, time required to devote to exercise, and the expense of buying low-calorie foods. These structural variables may later be considered with the perceived benefits and barriers.

The manner in which a nurse perceives the threat of illness is based on his/her personal background. These perceptions determine the course of action which a nurse will ultimately take in order to make improvements in his/her lifestyle patterns. Whether or not the nurse perceives the threat as serious depends on the potential difficulties which he/she may have to deal with in the future.

The likelihood to change health behavior results from influences of the first two major categories in Figure 1. This determines the nurse's lifestyle choice, whether it involves healthy or unhealthy behavior. Unfortunately, even though the nurse is aware of what is essentially healthy, he/she may still choose an unhealthy behavior (e.g., smoking) to satisfy his or her personal desires. It is in this context that the Health Belief Model supports these assumptions regarding nurses' health behaviors.

In order to focus more on health-oriented rather than disease-specific behaviors, Pender (1987) developed the "Health

Promotion Model." This model identifies significant factors which contribute to an individual's likelihood to participate in self-care health promotion behaviors. Principles used in this model originate from the social learning theory of behavior. Components of the model include: 1) individual cognitive-perceptual factors, 2) modifying factors, and 3) variables influencing the likelihood to engage in health-promotion behaviors (see Figure 2).

Cognitive-perceptual factors are the "primary motivational mechanisms for acquisition and maintenance of health-promoting behaviors" (Pender, 1987, p.60). The value which an individual places on health determines the overall importance of incorporating health-promotion behaviors in personal lifestyle. Perceived control deals with the desire and probability of controlling health status. The concept of "self-efficacy" deals with one's ability to engage in health behaviors which produce desirable outcomes. If the individual comprehends positive results then the health-promoting behavior is likely to be continued.

Personal definitions of health also determine individual patterns of health behavior. Health can be defined from the extreme of "absence of illness" to "high-level wellness" depending on individual differences (Pender, 1987, p. 63). Self-rating of health, or perceived health status, may impact on the frequency and intensity which individuals engage in health-promotion behaviors. Those individuals who report good health

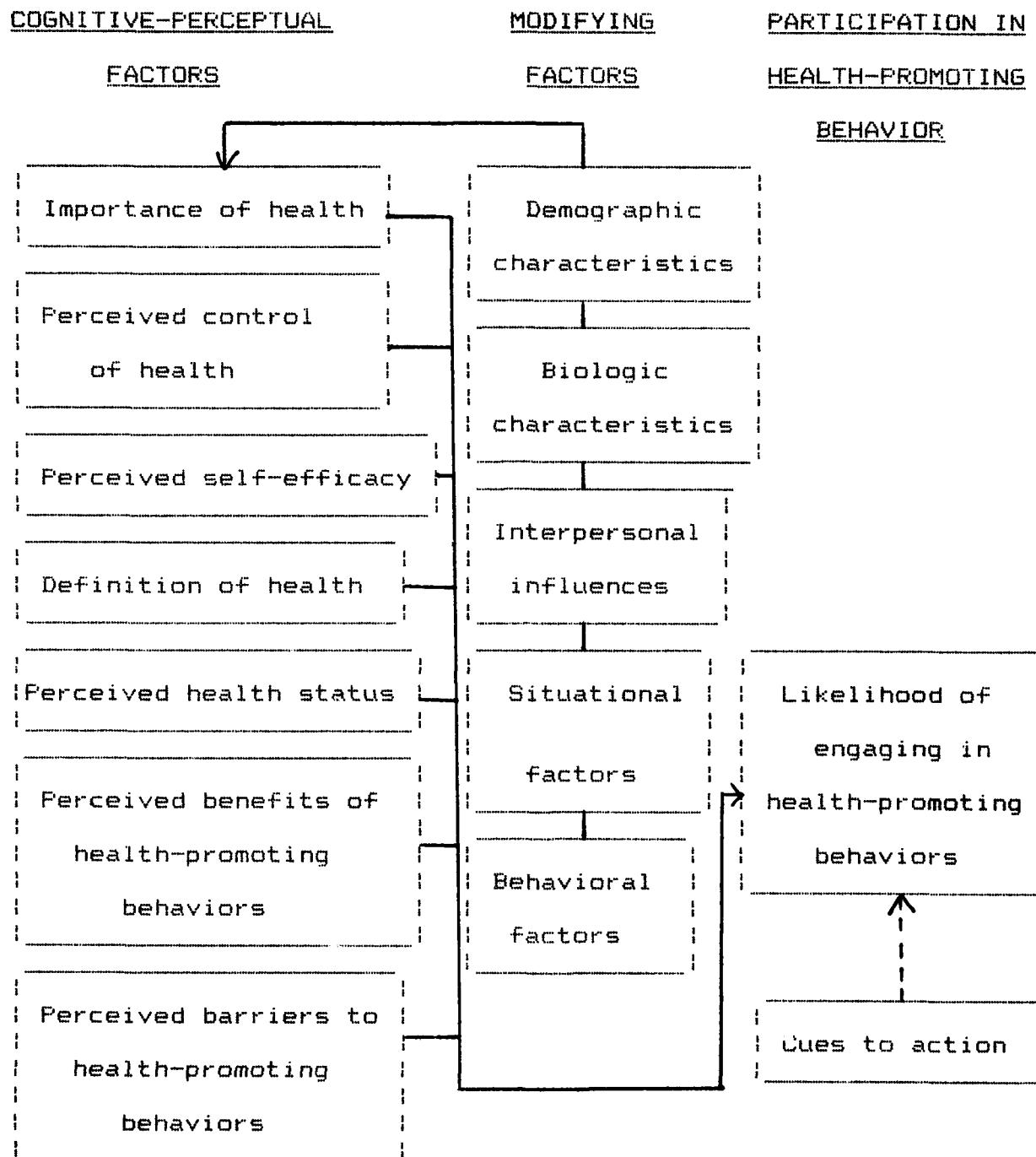


Figure 2. The health promotion model.

Note. From Health Promotion in Nursing Practice (2nd ed.)

(p.58) by N. J. Pender, 1987, Norwalk, CT: Appleton & Lange.

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status are more likely to participate in behaviors which foster healthy lifestyles (Pender, 1987).

Perceived benefits of health-promotion behaviors influence the level of participation in these behaviors. Once benefits are identified, individuals are likely to continue with such health behaviors. Behaviors which are valued as beneficial are often continued (Pender, 1987). On the contrary, perceived barriers to health-promoting behaviors focus on the "unavailability, inconvenience, or difficulty of a particular health-promoting" option (Pender, 1987, p. 65). Such barriers may determine the frequency of participation in health-promotion behaviors.

Modifying factors included in Pender's model are more specific than those presented in Becker's "Health Belief Model." Those factors which are considered important in influencing individual cognitive-perceptual factors and ultimately the participation in health-promotion behaviors include the following characteristics: 1) demographic, 2) biologic, 3) interpersonal, 4) situational, and 5) behavioral. Differences in demographic characteristics may determine the likelihood of participation in particular health-promoting behaviors. These characteristics include age, gender, ethnic origin, income, and education. One of the biologic characteristics which may influence an individual's perception of health is weight. Interpersonal influences include "expectations of significant others, family patterns of health care, and interactions with health professionals" (Pender, 1987, p. 67). Situational factors

involve available options and accessibility to alternative health behaviors thus requiring the individual to engage in the decision-making process. Behavioral factors deal with previous participation in health promotion behaviors which contribute to continued involvement in such behaviors.

The last phase of participation in health-promoting behaviors is influenced by cues to action. These cues may be either internal (from the self) or external (from the environment). Consequently, initiation and maintenance of health-promoting behaviors results from the influence of cognitive-perceptual and modifying factors and from the influence of cues to action. Pender's model considers many factors which may contribute to participation in health-promoting behaviors and to involvement with health maintenance over the life span.

#### Summary

Individual level of wellness and participation in health promotion behaviors are based on the interaction between life stressors and coping abilities (Dayani, 1979). Nurses have the responsibility of ensuring that the public attains, maintains, and promotes personal health habits for emotional and physical wellness (Moll, 1982). This can be done through purposeful interventions or "role modeling." Nurses serve as role models thus facilitating direction and development in others lives. By assisting clients to identify personal strengths/weaknesses and to consider stressors which are a challenge to their basic needs, nurses can encourage clients to engage in health-promotion

behaviors. Subsequently, role modeling is a key factor in promoting healthy behaviors.

This study will focus on the emotional, social, and physical aspects of health behaviors reported by professional nurses. The concepts of physical fitness and wellness will be explored through the examination of reported self-care health behaviors in professional nurses. Hettler (1984) states healthy individuals are those in peak wellness with a balance among occupational, social, spiritual, emotional, intellectual, and physical dimensions.

## CHAPTER 3

## Review of Literature

The review of literature will concentrate on the variables which will be measured in this study. It will focus on the following problem areas which have been identified among professional nurses as well as the general population: nutrition, exercise, inappropriate use of drugs and/or alcohol, smoking, and stress. This literature review will deal with some of the personal health habits which nurses should improve prior to educating the public as role models for wellness and healthful living.

Nutrition

Many Americans lead physically inactive lifestyles thus reducing their caloric needs depending on age, gender, and body frame size (Hansen & Wyse 1980). Biological, psychological, sociocultural, and environmental factors influence the nutritional habits of humans (Pender, 1982). Kelly (1979) reported that 2 out of every 5 individuals in the U.S.A. are considered obese. Obesity is defined as being "20% or more overweight by standard height and weight tables" (Pender, 1982, p. 294).

There is little information available regarding the nutritional status of nurses. Nonetheless, professional nurses can be effective role models for clients by demonstrating proper dietary habits and methods of preventing obesity (White, 1986; Pender, 1982). Efforts to promote weight loss through behavior

modification show that the intervention is often influenced by the beliefs and health behaviors of the health professional who is conducting the therapy (White). Before initiating a weight-loss program, those individuals who are overweight should evaluate their present dietary habits and have a medical checkup which includes an electrocardiogram (Pender, 1982).

Evans (1979) studied 47 hospital nurses (ages 23-52) and found that 87% of the sample surveyed reported poor nutritional habits. Of these nurses, 94% did not incorporate regular exercise into their daily activities. Ragsdale, Throckmorton, & Goad (1984) reported similar findings in a study of nursing faculty and allied health professionals. Since nurses' health behaviors are comparable to those of the general public, they may need to make changes in their lifestyles to portray an effective image of wellness.

#### Exercise

The need for exercise in attaining high-level wellness has only recently been addressed (Milroy, 1977). Exercise is referred to as "regular or repeated appropriate use of physical activity for the purpose of training or developing the body and mind for the sake of health" (Halfman & Hojnacki, 1981, p. 1). Regular exercise is of utmost importance for health maintenance. Thomas (1979) and Greenberg, Arbeit, & Rubin (1979) revealed that individuals who were more active in exercise programs were less likely to smoke or consume alcoholic beverages. Furthermore, these individuals were more likely to improve their dietary

habits, to find outlets for reducing their stress levels, and to maintain their blood pressure within normal limits. Age, gender, and competitive interest account for the variations in fitness profiles among the American public (Hojnacki, 1981).

Rimer & Glassman (1983) reported that nurses' participation in fitness programs has not been addressed in nursing literature. Another study, however, disclosed that nurses are active in fitness programs by: 1) distributing information and counseling in schools and occupational health settings, 2) initiating fitness programs in community health settings, and 3) participating in exercise programs (MacNamara, 1980; Pender, 1982). Nurses realize that self-responsibility is the key for personal control in their lifestyles (Moll, 1982). Even though professional nurses are aware of the beneficial effects from exercise, they seldom take the time to include a form of regular exercise in their personal lifestyle patterns (Milazzo, 1988).

The National Heart, Lung, and Blood Institute, a government agency, recommends that adults exercise at least 3-5 times per week for a minimum of twenty minutes each session to improve their cardiovascular status (Department of Health and Human Services, 1981). Running and aerobics programs have gained widespread popularity as forms of exercise for many (Milroy, 1977). There have been numerous physiological benefits reported from regular exercise (Halfman & Hojnacki, 1981). Exercise increases the cardiac output, strengthens the cardiac muscle, and improves collateral circulation and oxygenation. In addition, the

musculoskeletal system is enhanced by exercise through strengthening the bones and making them more resistant to breaking. In addition, Booth & Gould (1975) and Taylor (1975) reported that regular exercise decreases the risk of osteoporosis, muscle atrophy, and bowel/bladder dysfunction. Levels of low-density cholesterol and triglycerides reduce as a result of exercise (Halfman & Hojnacki, 1981). Decreased levels of these fatty substances have been reported to decrease the risk of heart disease (Halfman & Hojnacki). Fixx (1977) found fewer cases of heart abnormalities in aging athletes. Blood pressure and serum glucose are better controlled with frequent exercise (Halfman & Hojnacki). Exercise has also been responsible for making significant improvements in the pulmonary status of those with chronic obstructive pulmonary disease (Halfman & Hojnacki).

Exercise likewise furnishes psychological benefits. Physical fitness increases ones' ability to deal with stress (Harris, 1975). Many athletes have found that exercise has reduced tension and improved mood. There is a positive correlation reported among mood, muscle condition, and posture (Harris). When exercise is coupled with stress-reduction techniques (i.e. yoga, biofeedback), its psychological benefits are augmented.

#### Inappropriate Use of Alcohol

The incidence and prevalence of alcohol consumption among nurses has been identified as a significant problem because it impairs the ability to function optimally on-the-job (Haack & Harford, 1984; Selby, 1985; Allsop, 1987; Booth, 1987; Scavnick-

Mylant, 1987; Naegle, 1988; Solari-Twadell, 1988; Stammer 1988). Bissell & Jones (1981) estimated that there were approximately 40,000 registered nurses in the United States who used alcohol inappropriately. More recently the American Nurses' Association estimated that 8% of the nation's 1.9 million professional nurses are addicted to drugs and/or alcohol (Naegle, 1988; Stammer, 1988). Nurses are ranked in the top ten professions that misuse alcohol (Allsop, 1987).

The development of alcoholism has been attributed to the stress associated with the nursing profession. Haack & Harford (1984, p. 577) state that the "psychologically demanding nature of the clinical environment and the technical tasks carried out by nurses" contribute to the amount of stress in nurses' lives. Booth's study (1985) exposed other possible causes for the use of alcohol among the nursing profession. The degree of work stress, shift rotation, peer group pressure, staff shortages, and surprisingly, the number of social functions attended by nurse managers where alcohol was available were all considered potential causes for alcohol use among nurses. Buxton (1985) and Braiker (1986) supported the belief that achievement-oriented individuals who strove to become 'supernurses' at work were more prone to become alcoholics.

Family alcoholism was considered a significant influence in the development of alcoholism in 80% of the nurses studied by Stammer (1988). Depression is often noted in one or more of the family members of alcoholic nurses (Sullivan, 1987). Commonly,

children of alcoholics internalize an exaggerated idea of their role as caregiver. They may enter the field of nursing because it is a helping profession. According to Black (1981), such individuals experience role reversal during childhood and develop a need to care for others. The chemically-dependent nurse's childhood home atmosphere may have been inconsistent with ambiguous role expectations, or the environment may have been restrictive with the denial of an existent problem in the family dynamics. The "absence of love was a dominant theme in the cultural paths of alcohol-impaired nurses," and they were often "plagued by a sense of worthlessness" (Stammer, 1988, p.78).

Bissell & Haberman (1984) found that 33% of their sample of recovering nurses were children of alcoholics. Stammer (1988) studied nurses who were recovering alcoholics and focused on drinking patterns related to age-related factors. Most of the younger nurses in Stammer's study (ages 24-40) began drinking during childhood or adolescence, while older nurses (ages 41-65) initiated their drinking patterns in nursing school or after they had been employed. These differences reflect the changes which have occurred in American society. Alcohol is becoming more acceptable and accessible at a younger age. Stammer concluded that the length of sobriety was shorter in the younger group of nurses than in the older group.

#### Misuse of Drugs

The nursing discipline is one in which "standards of conduct are expected to be exemplary" (Booth, 1987, p.626). In a

study of the actions of all state boards of nursing, 68% of the actions against nurses were because of substance abuse (ANA, 1984). Naegle (1988) conducted a study of registered nurses across the U.S.A. and reported that 3% were using illicit drugs on a regular basis of at least once a month. Nearly 25% of these respondents had tried marijuana at some time in their lives, but very few of these individuals had ever experimented with hard drugs. Male nurses responding to the survey reported more drug use which corresponds with the increased incidence of drug use among men in the general population (Naegle). Emergency room nurses reported more drug use than nurses in other specialty areas (Naegle). Bissell & Haberman (1984) found that nurses who requested to move to areas which were less visible or to change from day to night shift were often those who desired to continue their drug habit.

Studies reveal that some nurses resort to drug use in coping with their personal problems (Selby, 1985; Schwartz, 1987; Sullivan, 1987; Naegle, 1988; Solari-Twadell, 1988; Stammer, 1988). Other nurses experiment with drugs because of work stressors. Drug addiction is often a method of dealing with immediate problems. Because of the desire to help others, nurses may develop a "strong denial mechanism that suppresses their own emotional pain, fears, and anxieties. As a result, they cannot recognize their own pain and become unable to benefit or learn from it" (Solari-Twadell, 1988, p.104). Easy accessibility to narcotics is a major cause of drug use among practicing

registered nurses (Naegle, 1988).

Nurses involved with drugs frequently display a tendency to avoid the traditional client role. Instead they may use the process of self-examination and self-medication to solve a problem (Solari-Twadell). Subsequently, many of these nurses have a difficult time admitting that they have become chemically-dependent. Booth (1987, p. 629) suggested the need for research in the "identification of work stress within nursing, its association with the development of substance abuse problems and the influence of stress reduction intervention."

Drug and alcohol use occasionally accompany one another in nurses engaging in substance abuse. Bissell & Haberman (1984) surveyed 100 nurses attending "Alcoholics Anonymous" classes and found that 38% were using drugs in addition to alcohol. Twelve percent of these nurses reported a current addiction to hard narcotics. Sullivan's study (1987) also revealed that many chemically-dependent nurses had alcoholic spouses.

#### Smoking

Nurses smoke more than any other group of health professionals (Spencer, 1983). According to the U.S. Department of Health, Education, and Welfare (1975), approximately 40% of nurses across the nation were smokers. Most recent reports relate that the nursing profession has a smoking rate of 33%, which is equal to that of the general female population (Fawcett-Henesy, 1988). Many of the statistics on smoking among female nurses have been reported from studies done on contraceptive

methods (Belanger, Hennekens, Rosner, & Speizer, 1978). Since nurses are the largest occupational group among health professionals, they can have an impact on the smoking patterns of others (Haughey et al., 1986).

Nurses who smoke often report stress as the cause of their habit, but they continue to smoke once they are relaxed and calm (Laurent, 1985). Some individuals choose to smoke because they believe that it is non-fattening (Laurent). Elkind (1988) found that nurses who smoke are less likely to perceive their habit as a health threat than nurses who are non-smokers. Noll (1969) revealed that nurses who smoked advised their clients less often regarding smoking cessation. Elkind also found that smokers often speculated that there was no causal relationship between smoking and disease.

Rausch, Zimmerman, & Hopp's (1987) study demonstrated that older nurses were more likely to smoke than younger nurses. Health behaviors noted to be significantly different between smoking and non-smoking nurses in this study were coffee consumption and breakfast frequency. Parkes (1983) and Hawker & Holtby (1988) studied nurses who were habitual smokers. Both studies showed a significant relationship between heavy smokers and number of days absent from work or leave taken from school. In Parkes' study, nurses were not given the opportunity to smoke during working hours.

In an effort to curb the number of smokers among health care professionals, worksite smoking cessation programs have been

initiated in many occupational health settings. Scott, Prue, Denier, & King's (1986) study of twenty-nine nurses revealed that 33% were able to abstain from smoking for up to twelve months after attending a smoking cessation program. Those with initial relapses continued smoking 50% of the time. Of those who relapsed twice, however, 100% resumed smoking. Myers et al. (1987) found that nurses who began smoking at a younger age were less likely to consider smoking cessation.

Several studies identify the importance of health care professionals as role models for smoking prevention and express concern for nurses who continue to smoke (U.S. Department of Health, Education, and Welfare, 1979; Wilson, 1988). Hardy (1982) recommends that nurses do a self-appraisal prior to becoming health educators. Such an appraisal may build self-awareness regarding the impact of their smoking behaviors on others. Nurses frequently project a 'double-message dilemma' when they profess to promote health, but continue to smoke at the same time.

The U.S. Dept. of HEW (1979) identified the following three areas where the role of health care providers is important to the public: 1) when acting as exemplars with their personal smoking habits, 2) when acting as health educators to inform the public of hazards and encouraging smoking cessation, and 3) when acting to control smoking in health care settings. The National Clearinghouse for Smoking and Health (1973) reported that the public expects health professionals to act as exemplars.

Nurses can act as role models by not smoking at work. The U.S. Dept. of HEW (1979) recommended that more research is necessary to assess the impact of the professional exemplar role.

#### Stress

Stress can be a major inhibitor of wellness (Humphrey, 1988). Selye (1978, p.1) described stress as "the nonspecific response of the body to any demand." Cox (1978, p.18) defined stress as an "individual perceptual phenomenon" which results when there is an imbalance between a perceived demand and one's ability to meet expectations that are coupled with the demand.

Most nursing literature focuses on the effects of illness and hospitalization relating to stress. The prevalence of stress in the nursing profession, however, has been evident for some time (Jacobsen & McGrath, 1983; Humphrey, 1988). Nursing is viewed as an anxiety-producing occupation (Milazzo, 1988; Jacobsen & McGrath). Lack of the opportunity to participate in decision-making, little sense of autonomy, and lack of recognition for performance are some of the work stressors identified by nurses in Jacobsen & McGrath's study. Many professional nurses display Type-A behavioral patterns which are characterized by lifestyles of high-level stress. These nurses have high expectations for themselves, are competitive, and are often aggressive (Jacobsen & McGrath).

The work environment may be the ideal setting to induce stress. Hospital staff nurses frequently answer the phone while

charting simultaneously; others work double shifts or race against the clock to complete their work. Fear of contracting AIDS, making wrong decisions, and fatigue are other common stressors among nurses (Humphrey, 1988). Humphrey's study revealed that clients, understaffing, administration, and coworkers were major stressors common among nurses. Shift rotation, attitudes of physicians, and compensation were also identified as stressful areas for some nurses (Humphrey).

"Burnout" is a reaction to a stressful work situation which begins at the workplace. This syndrome is often related to exhaustion stemming from overload or underload in the nurse's job. Individuals who become burnout have usually experienced a prolonged, intense involvement with people (Jacobsen & McGrath, 1983). Burnout involves a psychological withdrawal from work comprised of resignation and distancing (Jacobsen & McGrath). Consequently, these individuals make a sharp distinction between their job and personal lives. Often clients are addressed in a less personal manner by nurses who experience burnout. Jacobsen & McGrath describe three phases of burnout: 1) emotional exhaustion, 2) negative feelings toward coworkers and clients, and 3) terminal burnout or total disgust.

In order to prevent burnout and to decrease work stressors, nurses must try to cope by increasing their self-awareness of personal health practices. Humphrey's study (1988) of nurses found that 75% were neglectful of their personal health behaviors because of work stressors. Milazzo (1988) found that intensive-

care unit nurses were better able to deal with environmental stressors than non-ICU nurses since ICU nurses were given the opportunity to vent their feelings to fellow co-workers and developed a form of social support.

Emotionally healthy nurses are able to meet problems face-to-face, to adapt to environmental conditions, and to include a variety of interests in their lifestyles. They are happy and accept themselves as they are. These nurses usually have a philosophy on life and experience inner harmony (Humphrey, 1988).

#### Summary

Health behaviors are largely a result of personal choices. Professional nurses must become more aware of their personal health habits. Friedman (1981) reported that nurses need to make improvements in the following areas to be more effective as spokespersons for health promotion: obesity, smoking, sedentary lifestyle, and stress. Moll (1982) relates that professional nurses can increase their self-awareness of holistic health in their personal lives by promoting wellness principles to others. Finally, little documented research on the health behaviors of military nurses was found in this literature review.

## CHAPTER 4

## Methodology

This chapter will focus on the setting and sample population of this study. It will also provide information regarding the reliability, validity, and administration of the instrument, as well as the procedure for data collection. The final area discussed in this section will be the treatment of data.

Setting

The setting for data collection involved two military hospitals (15- and 55-bed facilities) and one civilian hospital (120-bed facility) in the Southwest near a metropolitan area. Confidentiality of each agency used in this study was maintained prior to, during, and after data collection. All three of these hospitals provided acute and long-term care for clients requiring medical and surgical attention. Staffing at the two military hospitals consisted of approximately 80 registered nurses, while the civilian hospital staffed an estimated 220 registered nurses.

Sample

In this study, the sample population included registered nurses working in these three hospitals. Convenience sampling was used to survey nurses who had a current professional nursing license in the designated hospitals. A sample size of at least 40 military and 40 civilian nurses was considered desirable for this study.

Procedure and Administration

This research proposal was approved by the Human Subjects

Committee at a large college in the Southwest prior to conducting the study. This study was then presented to the three nurse administrators at the chosen medical facilities for approval. A random sample of nurses then received a questionnaire with a cover letter explaining the purpose of the investigation (see Appendixes B and C). The cover letter included specific instructions to provide honest responses and to keep the cover letter attached in order to maintain privacy when completing the questionnaire (see Appendix B). In addition, the name, address, and telephone number of the investigator were provided in the event that questions or comments arose. Nurses responding to the survey were reminded not to include their names on the questionnaire for the purpose of maintaining anonymity. Completion of the questionnaire constituted the informed consent to participate in this study. Participants were instructed to return the completed questionnaire in the self-addressed, stamped envelope provided with the questionnaire form.

#### Data Collection Instrument

The Questionnaire on Physical Fitness (see Appendix C) used in this study is a descriptive survey which was designed by Evans (1979) to measure the health behaviors specific to physical fitness in professional nurses. Evans first administered this instrument at Texas Women's University in Houston. Content for the questionnaire originated from the President's Council on Youth Fitness' definition of physical fitness which described it as:

a broad quality involving medical and dental supervision, immunization and protection against disease, nutrition, rest, relaxation, good health practices, sanitation, and regular exercise (United States President's, 1962, p.iii).

Areas addressed on this questionnaire deal primarily with emotional, social, and physical wellness. Evans' questionnaire is composed of items associated with the following categories: nutrition, sleep, relaxation, exercise, and medical awareness of health habits.

Evans established reliability for the questionnaire by utilizing the test-retest method on five registered nurses. They were administered the questionnaire twice at an interval of one week apart. A correlation coefficient of  $r = .98$  resulted. Content validity was established by submitting the questionnaire to a panel of three judges known to be experts in the areas of health and nutrition. Construct validity has not been established since none of the studies using the questionnaire have shown extreme differences between healthy and unhealthy lifestyle patterns among the sample subjects.

Freedman (1983) later revised the Evans' questionnaire and administered it along with the Health and Ways of Living Questionnaire, which was an instrument developed to measure the health habits of the general public (Breslow, 1972). Both of these questionnaires were found to measure the same content. The revision of Evans' questionnaire had a reliability coefficient of  $r = .78$  (Edwards, 1986). Edwards then modified the Evans' questionnaire basing it on a five-point Likert scale. Low scores

were indicative of healthy behaviors, and high scores reflected unhealthy behaviors. This modified version had a reliability coefficient of  $\rho = .71$ . Edwards added questions relating to satisfaction with personal health behaviors and also inquired into what efforts or intents nurses had demonstrated to make changes in their lifestyles. Data obtained in Edwards' study were evaluated at interval levels according to the category of health behavior.

In this investigation, Edwards' modified questionnaire was used. The order of questions on physical fitness was maintained as it was in Edwards' questionnaire. Items #75, 76, and 77 (see Appendix C) were cued specifically for gender differences since they were answered incorrectly in Edwards' study. Item #80 (see Appendix C) was added to address nurses as role models in relation to promoting health and educating the public. Demographic questions were placed at the end of the instrument to focus greater attention on questions directed toward assessment of physical fitness. Questions regarding past and present military service were added to the demographic section to identify military, civilian, and reservist nurses. Items #86 and 87 (see Appendix C) were changed to address basic nursing education and highest degree obtained rather than "previous education other than high school." Edwards' question regarding intended major was deleted since this study is not directed toward student nurses. Items #83, 91, 92, 93 (see Appendix C) regarding cultural background, number of years in nursing, and

nursing specialty area were added to the demographic section to enhance data analysis.

#### Treatment of Data

The scoring procedure for Evans' questionnaire yields interval level data. Health behavior categories were checked for reliability using the Cronbach's alpha test. These categories consisted of the cumulative scores of items applicable to that area. Standardized alphas were established for each health category in Evans' modified questionnaire.

The health behavior or fitness categories of 1) diet, 2) exercise, 3) stress, 4) drug and alcohol consumption, 5) rest, 6) weight, 7) smoking, and 8) medical care were compared and contrasted as reported by military and civilian nurses. Questions yielded a mean score in these eight areas to further relate any associations between the two groups of professional nurses. The student's t test was used to make group comparisons between civilian and military nurses' responses. Distinctive patterns of response were displayed using tables of frequency distributions and percentages, line graphs, and pie charts. The Pearson Product-Moment Correlation Coefficient was used to calculate the relationships among specific variables examined in this study.

#### Summary

The modified Evans Questionnaire on Physical Fitness was a valuable tool for measuring the health behaviors reported by registered nurses. This self-administered instrument was designed to calculate mean scores for specific health promotion

behavior categories prevalent among those surveyed. The tool also focused on nurses' opinions regarding role modeling for the public. Evans' questionnaire was an effective instrument for establishing associations among the two sample groups. Such correlations were essential in conducting a comparative investigation. In conclusion, the quality of health behaviors common among professional nurses was evaluated as a result of the modified Evans' questionnaire.

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Appendix B  
Questionnaire Cover Letter

Dear Participant,

My name is Teresa Towne, and I am a graduate student in the adult health management program at the College of Nursing at \_\_\_\_\_ University. To fulfill requirements for my Master's degree, I am conducting a study on the health habits of registered nurses. I am interested in learning more about your health behaviors and would encourage you to participate in this study.

Your responses to the attached questionnaire are anonymous so please do not put your name anywhere on the form. Keep this cover letter attached when completing the survey to ensure privacy. Your answers should be honest and reflect your usual behavior. Follow the directions carefully, and it will take approximately 15-20 minutes to complete the questionnaire. When you have completed the questionnaire, return it promptly in the stamped self-addressed envelope provided for your convenience. Your return of the completed questionnaire constitutes informed consent to participate in the study.

The potential benefit of this study is increased knowledge regarding nurses' health-related behaviors. If any questions arise while you are completing the questionnaire, please feel free to contact me. Your cooperation in this study is greatly appreciated. Thank you for your time!

Sincerely,

Teresa A. Towne, R.N.

**Appendix C**  
**Health Behavior Questionnaire**

## QUESTIONNAIRE ON PHYSICAL FITNESS

Instructions: Please indicate your response to each statement according to whether or not you:

SA = Strongly agree

A = Agree

? = Neither agree nor disagree

D = Disagree

SD = Strongly disagree

Circle your response. If you do not understand the statement, add comments. Again, please remember not to put your name anywhere on this form!!

1. I eat 4 servings of fruits or vegetables a day.	SA   A   ?   D   SD
2. I drink/eat 2-3 servings of milk or milk products a day.	SA   A   ?   D   SD
3. I eat at least 2 servings of high quality protein a day (eggs, fish, red meat, poultry).	SA   A   ?   D   SD
4. I buy lean meats or trim off fat.	SA   A   ?   D   SD
5. I am a vegetarian and do not eat meat.	SA   A   ?   D   SD
6. I eat 4 servings of bread and/or cereal a day.	SA   A   ?   D   SD
7. I usually plan my meals with Four Food Groups in mind.	SA   A   ?   D   SD

8. I limit or avoid adding salt to the food I eat. SA A ? D SD

9. I buy polyunsaturated margarine and cooking oil. SA A ? D SD

10. I avoid foods high in cholesterol. SA A ? D SD

11. I usually eat breakfast. SA A ? D SD

12. I drink caffeinated beverages. SA A ? D SD

13. I eat candy and refined sweets for snacks and desserts. SA A ? D SD

14. Fast food accounts for the majority of my food intake. SA A ? D SD

15. For my height and frame, I maintain my ideal weight. SA A ? D SD

16. When dieting, I restrict myself to the food groups lowest in calories. SA A ? D SD

17. I take a vitamin supplement daily. SA A ? D SD

18. I base food selections on nutritional information and read ingredients on the labels of foods I buy. SA A ? D SD

19. I experience constipation frequently. SA A ? D SD

20. I get enough sleep to feel rested. SA A ? D SD

21. I retire at approximately the same time (within 2 hours) 5-6 nights a week. SA A ? D SD

22. I wake up feeling fatigued. SA A ? D SD

23. Insomnia is a problem for me.	SA	A	?	D	SD
24. I use sleeping pills.	SA	A	?	D	SD
25. I walk in my sleep.	SA	A	?	D	SD
26. I find it necessary to take a nap during the day.	SA	A	?	D	SD
27. When I am working a night shift or studying for long hours, I am able to sleep enough hours to get rested.	SA	A	?	D	SD
28. I feel I get enough exercise at work or (if not working) during my daily routine.	SA	A	?	D	SD
29. I walk or ride a bike when doing everyday errands.	SA	A	?	D	SD
30. I use exercise as an aid to control my weight.	SA	A	?	D	SD
31. I am proud of my physical appearance.	SA	A	?	D	SD
32. I routinely exercise or participate in sports.	SA	A	?	D	SD
33. I am involved in some form of aerobic exercise for 1/2 hour at least three times a week.	SA	A	?	D	SD
34. I enjoy exercise.	SA	A	?	D	SD
35. I enjoy participating in sports.	SA	A	?	D	SD

36. I am satisfied with my present job or school. SA A ? D SD

37. I have changed jobs in the last year. SA A ? D SD

38. I have taken at least two weeks vacation in the last year. SA A ? D SD

39. I find it easy to relax at home after work or school and on days off. SA A ? D SD

40. I am handling my financial responsibilities adequately at present. SA A ? D SD

41. I have made a major purchase by loan in the past year. SA A ? D SD

42. I have lost a spouse, relative, or close friend in the last year. SA A ? D SD

43. I have a tendency to bite my nails or tap my foot when I am nervous. SA A ? D SD

44. I take tranquilizers. SA A ? D SD

45. I lead a stressful life. SA A ? D SD

46. I am generally satisfied with my life. SA A ? D SD

47. I have had a dental check-up in the past 12 months. SA A ? D SD

48. I have a regular dentist. SA A ? D SD

49. I brush my teeth after every meal. SA A ? D SD

50. I use dental floss. SA A ? D SD

51. I use a fluoride toothpaste. SA A ? D SD

52. My gums bleed when I brush my teeth. SA A ? D SD

53. I have lost permanent teeth due to infection or decay. SA A ? D SD

54. I have had an eye check-up in the past year. SA A ? D SD

55. I have had been checked for glaucoma in the past 12 months. SA A ? D SD

56. I wear my glasses or contact lenses as prescribed (those with prescription lenses only). SA A ? D SD

57. I have had a routine physical check-up in the last 12 months. SA A ? D SD

58. I am satisfied with my health practices in the following areas:

- a. Diet SA A ? D SD
- b. Exercise SA A ? D SD
- c. Reduction of stress SA A ? D SD
- d. Alcohol and drugs SA A ? D SD
- e. Rest and sleep SA A ? D SD
- f. Weight SA A ? D SD
- g. Smoking (only answer if smoker) SA A ? D SD

59. I have worked to acquire better health habits in the following areas:

- a. Diet SA A ? D SD
- b. Exercise SA A ? D SD

c. Reduction of stress	SA	A	?	D	SD
d. Consumption of alcohol and/or drugs	SA	A	?	D	SD
e. Rest and sleep	SA	A	?	D	SD
f. Weight	SA	A	?	D	SD
g. Smoking (only answer if smoker)	SA	A	?	D	SD
60. I intend to change practices which I currently have which may not be beneficial to my health in the following areas:					
a. Diet	SA	A	?	D	SD
b. Exercise	SA	A	?	D	SD
c. Reduction of stress	SA	A	?	D	SD
d. Substance abuse	SA	A	?	D	SD
e. Rest and sleep	SA	A	?	D	SD
f. Weight	SA	A	?	D	SD
g. Smoking (only answer if a smoker)	SA	A	?	D	SD
61. I have had an EKG (cardiogram of the heart).	SA	A	?	D	SD
62. I have had a chest X-ray or TB test in the last year.	SA	A	?	D	SD
63. I never drink alcoholic beverages.	SA	A	?	D	SD
64. I never exceed more than one alcoholic drink a day (one glass of wine, one beer, one mixed drink).	SA	A	?	D	SD
65. I occasionally overdo my consumption of alcohol.	SA	A	?	D	SD

66. I occasionally overdo my consumption of drugs. SA A ? D SD

67. I am in good health. SA A ? D SD

68. I know the 7 warning signs of cancer. SA A ? D SD

69. I do not smoke. SA A ? D SD

70. I smoke cigarettes, a pipe, or chew tobacco (if so, circle which one). SA A ? D SD

71. I know which foods are high in cholesterol. SA A ? D SD

72. I spend at least \$15.00 per month on sedatives or pain relievers. SA A ? D SD

73. I rarely take sedatives or pain relievers. SA A ? D SD

74. In the past six months I have used:

- a. Marijuana SA A ? D SD
- b. Cocaine SA A ? D SD
- c. Stimulant drugs SA A ? D SD
- d. Sedative drugs SA A ? D SD
- e. Non-prescription drugs (allergy medication, Aspirin, Tylenol, others -- please circle which, or specify what if others) SA A ? D SD
- f. Drugs to reduce stress SA A ? D SD

75. I perform a breast self-exam every month (both females and males). SA A ? D SD

76. I have had a pap smear in the past 12 months (females only). SA A ? D SD

77. I perform a testicular self-exam every month (males only). SA A ? D SD

78. Nurses serve as role models for health practices. SA A ? D SD

79. Nurses should change personal health practices which may not be beneficial to their health. SA A ? D SD

80. Nurses are important in health promotion for the public. SA A ? D SD

Directions: Complete the following questions by filling in the information requested or by checking the appropriate response(s). The numbers in parentheses corresponding to the answers are for computer analysis.

81. Age: \_\_\_\_ yrs. 82. Sex: Male \_\_\_\_ (1) Female \_\_\_\_ (2)

83. Cultural background:

American-Indian \_\_\_\_ (1) Anglo-American \_\_\_\_ (2)

Black-American \_\_\_\_ (3) Hispanic-American \_\_\_\_ (4)

Asian-American \_\_\_\_ (5) Oriental \_\_\_\_ (6) Other \_\_\_\_ (7)

If other, please specify.

84. Marital status: Married \_\_\_\_ (1) Single \_\_\_\_ (2)

Divorced \_\_\_\_ (3) Separated \_\_\_\_ (4) Widowed \_\_\_\_ (5)

85. Number of dependent children: None \_\_\_\_\_ (1) 1 \_\_\_\_\_ (2)  
2 \_\_\_\_\_ (3) 3 \_\_\_\_\_ (4) 4 \_\_\_\_\_ (5) 5 or more \_\_\_\_\_ (6)

86. Basic nursing education: Associate degree \_\_\_\_\_ (1)  
Diploma \_\_\_\_\_ (2) Bachelor's \_\_\_\_\_ (3)

87. Highest degree obtained: Associate degree \_\_\_\_\_ (1)  
Diploma \_\_\_\_\_ (2) Bachelor's \_\_\_\_\_ (3) Master's \_\_\_\_\_ (4)  
Doctorate \_\_\_\_\_ (5)

88. Have you served in the military in the past? Yes \_\_\_\_\_ (1)  
No \_\_\_\_\_ (2) If yes, for how long? \_\_\_\_\_ yrs. (3)

89. Are you presently in the military? Yes \_\_\_\_\_ (1) No \_\_\_\_\_ (2)

90. Are you presently in the reserves? Yes \_\_\_\_\_ (1) No \_\_\_\_\_ (2)

91. How long have you been a registered nurse? 1-5yrs. \_\_\_\_\_ (1)  
5-10 yrs. \_\_\_\_\_ (2) 10-15 yrs. \_\_\_\_\_ (3) 15-20 yrs. \_\_\_\_\_ (4)  
>20 yrs. \_\_\_\_\_ (5)

92. Please state your nursing specialty area: \_\_\_\_\_

93. What area of nursing are you currently employed in (only if employed)? \_\_\_\_\_

94. Are you employed full-time \_\_\_\_\_ (1) or part-time \_\_\_\_\_ (2)?

95. Does your religious or ethnic background require any restrictions concerning food, drink, or health practices?  
Yes \_\_\_\_\_ (1) No \_\_\_\_\_ (2) If yes, please specify. \_\_\_\_\_

Answer the following questions to the best of your ability. If you do not know, put the letters "NK."

96. Height \_\_\_\_\_ 97. Weight \_\_\_\_\_ (when did you last weigh yourself? \_\_\_\_\_)

98. Frame size: Small \_\_\_\_ (1) Medium \_\_\_\_ (2) Large \_\_\_\_ (3)

\*\*\* If unsure, measure around your wrist with your thumb and middle finger. If they overlap, you are small-framed; if they meet, you are medium-framed; and if they do not meet, you are large-framed.

99. Pulse rate \_\_\_\_ 100. Blood pressure \_\_\_\_ (when last checked)

101. Do you presently have any diagnosed disease or illness?

Yes \_\_\_\_ (1) No \_\_\_\_ (2)

If yes, please identify. \_\_\_\_\_

102. Are you presently on prescribed or routine medications?

Yes \_\_\_\_ (1) No \_\_\_\_ (2)

If yes, please identify. \_\_\_\_\_

103. How would you rate your health? Excellent \_\_\_\_ (1)

Good \_\_\_\_ (2) Fair \_\_\_\_ (3) Poor \_\_\_\_ (4)

Please check any of the following risk factors which you may have. If you do not have this risk factor, do not check. If you do not know, put "NK."

104. Family history of: Heart disease \_\_\_\_ (1)

Cancer \_\_\_\_ (2) Diabetes \_\_\_\_ (3)

Personal history of: Hypertension \_\_\_\_ (4) Elevated triglycerides \_\_\_\_ (5) High cholesterol \_\_\_\_ (6)

Diabetes \_\_\_\_ (7) Gout \_\_\_\_ (8) Smoking \_\_\_\_ (9)

Stress \_\_\_\_ (10) No exercise regimen \_\_\_\_ (11)

Angina \_\_\_\_ (12) Overweight \_\_\_\_ (13)

105. State approximately how many days of work/school you missed  
in the last 12 months due to illness. \_\_\_\_\_

Comments: \_\_\_\_\_